# Amateur Radio

JOURNAL OF THE WIRELESS

INSTITUTE OF AUSTRALIA

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#### EDITOR:

T. D. HOGAN, VK3HX, Telephone: UM 1732.

J. G. MARSLAND, VK3NY.

J. C. DUNCAN, VK3VZ.

TECHNICAL STAFF:

L. B. FISHER, VK3AFF.

R. W. HIGGINBOTHAM, VK3RN.

CIRCULATION: I. K. SEWELL, VK3IK.

I. K. SEWELL, VK3IK.

ADVERTISING REPRESENTATIVE:

W. J. LEWIS, 20 Queen St., Melbourne, C.1. Telephone: MU 5154.

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VK3WI: Sundays, 1139 hours ZST, simultaneously on 3373 and 7145 Kc. and re-broadcast on 50 and 144 Mc. Inbrastals working frequency 7135 Kc. Individua frequency checks of Amateur Stations given when VK3WI is on the air.

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# AMATEUR RADIO

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#### EDITORIAL

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#### NATIONAL FIELD DAY

The month of January signifies two things in the Amsteur Calendar. The commencement of a new year and the approach of another National Field Day. The Amsteur cannot, in spite of his adeptines, do anything to speed or impede the march of time, but he can by enthusiastic support do much to ensure and enhance the success of the National Field Day.

The value of this Contest as a proving ground for national emergency equipment has been stressed in editorials on numerous occasions. The mere fact that there is no immediate prospect of war and that the Government is extremely slow in initiating its Civil Delence Scheme does not mean that the National Field Day has loot its importance.

While the importance of Amateur Emergency Networks in wartime is obvious to all, the work of the same networks in the ever recurring peacetime national calamities such as bush fires, floods, and communication failures, although not as glamorous, is nevertheless equally important.

"Australia" week-end was origin-

ally chosen for the Contest because it offered a long week-end during suitable season for outdoor operation. Since the reduction of hours of operation it has been suggested a Sunday later in the season would be more acceptable. What do you think?

The success of any function irrespective of when it is held depends upon the number of, and the enthusiasm shown by, the participants. The enthusiasm of the actual participants in past Contests has been ably demonstrated by the results achieved. Therefore with the help of every Amateur who can obtain the necessary gear, this year's Contest could, and should, be an unqualified success, and should, be an unqualified success.

To use a colloquialism, "Give it a go mate!" Enjoy the fun and promote the interests of the Amateur Communicator.

FEDERAL EXECUTIVE.

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# Foolproof Antenna Tuning-Final Loading System

BY D. W. TACEY.\* VK3DW

Experimenting with antenna systems is a most absorbing pastime, and indeed more than a little so, to the average Amateur. However, after many hours of cut and try, also hauling up and down, is the result mediocre and the old Zepp seems rather good after all.

The writer finally settled on centre feed and has been every pleased with results over the past three years. No is an optimum length of feeders for any particular band, the writer's point of that feeders can be any length within reason to sait the particular location, and the particular location, the particular length in use in matched within limits to a corresponding impedance on the authority of the particular control of the particular length in use in matched within limits to a corresponding impedance on the authority of the particular control of the particular corrective corrective.

For some time, the antenna tumer used Just a plain parallel tuned coll using a two-gang bc.1. condenser with the rolor earthed (optional) and input to make two-gang bc.1. condenser with the rolor earthed (optional) and input to make to two turns in the centre of collected only and a two turn free coil connected to the time to to the connected time to the connected time to the connected time to the time time to the time time time to the time time time to the time time time the connected time to the time time

Quite often one hears chaps on the air bemonning the fact that they are unable to make parallel tuning operate correctly and therefore prefer series of the parallel method, with about the parallel method, will about he power, very little reaching the antenna proper, and the parallel method, will about he power where it should be, in the antenna proper, and the parallel method will be proved the proper where it should be, in the antenna. A matter of "matching the impedance."

Parallel tuning will present difficulties not met with in series tuning, although once mastered is a pleasure to use.

The system now in use is the outcome of further experimentation to make tuning simpler, Fig. 2 is selfexplanatory and will feed any length of wire from 1 inch to infinity. Maybe I have exaggerated a little by the inclusion of infinity, although I am certain of the I inch, average antenna systems, and any equal or unequal lengths of any conducting material.

The parallel tuned coil as Fig. 1 and the link system remain the same, the only differences being that one feeder or what have you connects to junction of one end of coil and a stator, the \*Deschamps Street, Lilydale, Victoria. other end of coil connects to the other stator, and the remaining feeder or what have you connects to the rotor, the earth being removed.

Now you have an ideal situation, an automatic combination of parallel and series tuning which will do two things

automatically.

Feed the radiating portion all it will take depending on its length, location, etc., and absorb the remainder, thereby correctly loading the final depending on the link adjustment at the final.

Therein lies the difference between straight parallel tuning which can be so misleading inasmuch that the coll condenser circuit can absorb power and the system appears to be working correctly except that it is not, unless

correctly except that it is not, unless the feeder taps are correctly adjusted. The system of Fig. 2 will not play such tricks, it will correctly feed the antenna system whatever it may be, and absorb only power that the antenna will not handle. Briefly, the impedance matching is automatic.

A point concerning QRM. The chap who uses his 100 watts to talk across the town is more than likely raising Cain on the other side of the Continent at the same time, but by the installation of short wires around the picture rail ladoors he can still put an S9 signal across town without causing unnecessary interference in some other Siate. The required

The system described commends itself by its simplicity and is in use by the writer with a total of 30 feet of wire around the picture rail for the 3.5 Mc. band, and up to S8 reports at around 200 miles.

I have not had the opportunity to test the system on beams, although it appears to have possibilities for this type of work and also for portable operation. Good luck, and less QRM.

## Quarter Wave Matching Stubs' Impedance Calculations

BY N. SOUTHWELL,† VK2ZF

How often have you, when experimenting with various types of antenne and transmission lines, required a matching stub, and repeatedly worked out that time-worn formula  $Zm=\sqrt[4]{21}$   $Z\bar{z}$ , for various values of antenna and line impedances. Alternatively,



†90 Dutton Street, Yagoona, N.S.W.

have you ever erected a beam and, having a section of line on hand you wished to use as a matching stub, wondered just what impedance your transmission line should be?

The writer recently had reason to become involved in calculations of quarter wave matching stubs and spent a few minutes in thought prior to the job. The result was the accompanying job. The result was the accompanying to the property of the property of

The chart lists the three variables— Zi Antenna Impedance in ohms. Z2 Transmission Line Impedances

In ohms.

Zm Quarter Wave Matching StubImpedance in ohms.

To use the chart, join the two known impedance values by a straight line (if necessary project this line till it intersects the third scale), where the line cuts the third scale, read off the impedance value required to give you a

For example, a two element beam with an impedance of 15 ohms, when used with a Quarter Wave Matching Stub of 72 ohms will match correctly a transmission line having an impedance of 360 ohms.

correct impedance match

The most satisfactory straight-edge the writer has found to use on the chart has been a rule made of transparent plastic.

Page 2

## A Phasing Type Single Sideband Suppressed Carrier Exciter

PART TWO

BY N. SOUTHWELL,\* VK2ZF

The audio frequency energy is supplied to the balanced modulator from a piled to the balanced modulator from a drive to a balance modulator that determines the output power obtainable from it, not the dc. input to the plate from it, not the dc. input to the plate for the plate from a decided and the plate described, the side-many appears in the plate circuit as double sideband energy, the plate from a decided and the plate of the plate circuit as double sideband energies that output from a large of more plate of the from any small amount of r.f. carrier leakage) when the stage is operating

The use of two balanced modulators feeding into a common load with the r.f. and a.f. drives to each being identical except for a shift of 90° in phase, results in a single sideband output. This occurs as follows:

control of the contro

Reference to Fig. 4 may make the foregoing somewhat easier to understand.

Now, let us dig a little deeper into the matter of supplying an r.f. carrier to a balanced modulator.

Earlier it was stated that the r.f. carrier acted as the switching medium, quite so, but to enable the carrier drive to do this effectively and efficiently, it must be supplied to the balanced modulator at such a level that the switching action on the a.f. energy takes place on the straight portion of the r.f. input waveform, and that the balanced mod-ulator is biassed to cut off well before the negative peak of the r.f. carrier drive is applied to its grid. If the amount of r.f. carrier supplied is insufficient, the switching action will take place non-linearly, i.e. the "switch action" will slow down during the period of its opening or closing, because when we get away from operating on the linear section of the r.f. carrier waveform, the balanced modulator operates to a point further up that wave where curvature sets in as the peak of the r.f. drive approaches, where the waveform flattens off. This results in an uneven, instead of a linear, build up of r.f. voltage on the grid before the tube is driven past cut off on each negative half cycle of r.f. carrier. This "starving" a balanced modulator of r.f. drive results in dis-tortion and a broad signal covering a large slice of the band adjacent to the operating frequency.

\* 90 Dutton Street, Yagoona, N.S.W.

In the case of the balanced modulators described in this exciter, never let the bias, as measured at the metering points, drop below —5 volts d.c. Usually the writer's exciter is run with a bias of around—9 to —10 v.d.c. on each balanced modulator grid. The negative d.c. bias is developed at the grids of the balanced modulators similarly as in a class C amplifier stage using grid leak.

The "double-sideband-single sidebandnarrow band phase modulation" switch is wired so that it disables one or other of the balanced modulators, together with its associated audio driver stage, when going onto d.s.b, or nb.pm. transmission. (For nb.fm. the carrier must be reinserted.)

The method of disabling the balanced modulators is to apply a voltage of approx. +50 v.d.c. to the cathodes of approx. +50 v.d.c. to the cathodes of the balanced modulator tube to be disabled, which is the equivalent of applying -50 v. to the plates. The audio drivers are disabled by disconnecting their h.t. feeds.

The nh.p.m. position on the switch is not of great use on the air on I Mc. as insufficient radian wing is obtainable numbered reading the properties of the

For Circuit Schematic and Coil Data, refer to Part One which appeared in the December, 1952, issue.

Metering facilities are provided in the balanced modulator singse for measuring grid in such sings, as mentioned pretously, this bias should never be viously, this bias should never be provided to the superior of the upper limit depends upon how good the shannee of your balanced modulators is, as carrier leakage through them In- the two 20,000 ohm resistors used in the metering circuits should be matched is not critical, the same requirement regarding matching, applies to the two the metering circuits.

Do not transmit at any time with the meter switch left connected to either of the balanced modulator metering positions, as in so doing you run the risk of unbalancing the drives to your balanced modulators.

The output circuit of the balanced modulators is a pp. split stator tuned tank and it is recommended that this circuit be adhered to for its good balancing properties. The r.f.c. in the essential to prevent the tank circuit acting as two tuned coupled circuits, which would happen if the coil ct. was grounded directly, when using a split stator condense with its rote grounded. Considerable experimentation took considerable experimentation took and the construction of the construction

#### 6AU6 CARRIER RE-INSERTION

Carrier re-insertion is obtained by taking r.f. drive from the input of the r.f. phase shift network, and feeding it r.f. phase shift network, and feeding it re-insertion tube and counceled as a penthode. The plate of the 6AU6 is plassed will beyond cut off by means of the adjustable pot its cathode Au6 is blassed will beyond cut off by means of the adjustable pot its cathode the correct position used when the carrier is re-inserted, and the 6AU6 red before the correct position used when the carrier is re-inserted, and the 6AU6 red and the fact of the correct position used when the carrier is re-inserted, and the 6AU6 red switch it its cathode lead.

The setting of the cathode circuit probenitometer determines the bias on the probenitometer determines the bias on the probenitometer re-lisered on the transmission. When re-linearing the carrier related to the transmission of carrier stage, only a few volts of carrier need be supplied to the tank of the transmission of carrier need be supplied to the tank of the transmission of the

runs ground 40 watts.
The efficiency of the final trops from
The efficiency of the final
The efficiency of the final
For eclass B linear stage. Naturally the
received signal strength drops also, but
received signal strength drops also, but
received signal strength drops also, but
onernal am. transmission. Many a time
the facility of being able to re-insert
explain to an amwering station, unaware
that they were listening to a sab. sigand, and therefore unable to read much,

what was taking place.

Various points were tried for the re-insertion of the carrier in the exciter

and the best place was found to be the balanced modulator's tank circuit. The further along the line that you choose to feed the currier back in (i.e. the SEAS or the 807 stage), the greater the shift baving occurred, resulting in the re-inserted carrier being slightly out of phase with the sideband energy.

This phenomenon happened to a degree when trying various often points of the above trouble is that when you monitor the signal on a.b., Den remonitor the signal on a.b., Den resignal, the pitch of the voice will be found to have changed slightly, assumbeen tuned in correctly before the check is made. The effect is also noticeable at asked to check critically the transmission. In carrying out this check at any has had some experience in receiving a.b. transmissions to do it, not a new-

The output of the balanced modulators is link coupled to the 6BAS 1st r.f. linear stage, operating class A on 14 Mc. An EASO diode is connected to the link to serve as a v.t.v.m., and is very handy when making adjustments, or lining up: on the link coupling the 6BAS to the 807 2nd r.f. linear stage.

The power level on these link circuits is very low, the circuits shielded to a large extent, and the linear stages operate class A. Vit.vim's connected to the links have proved an exceedingly up difficulties in the way of funing adjustments, and neutralisation checking. The vit.vim's may look surplus to some people, but it is considered they have justified their inclusion in the

The 6BAS 1st linear stage is quite conventional. He tube operating under similar conditions to what it does in a receiver r.f. stage. A wire wound potentiometer is used to control in This control canables independent adjustment to be made of the overall gain of the r.f. linear amplifiers of the exciter and has proved a bandy feature. The stage, an 80° operating class A: linear stage, as 80° operating class A: linear The use of an 80° as class A.T. amplifier on 14 Mc. may cause a few eye-brows to rise slightly, but apart framework as the stage, to stop happening which was anticipated, no rouble of any type was encountered with this stage. The parasitic rf. choke the stage of th

turns apresed out to a length of a Metering of the cathode current is the control of the cathode current is checking the stage's operating condition. The output power from the 807 is conservatively rated at 3 watts, and the hough more can be obtained from it, ample drive is available though, nor can be obtained from it, ample drive is available though, the control of the stage of the stage to 150 w, peak on 22,5, and that, after all, was what this way that the stage of the stage of

the linear amplifiers has been tried, but no difference could be detected in the signal radiated, or noticed on an oscilloscope, so it was discarded.

The two linear amplifiers each being operated class A, present a constant lost to their input circuits, as they do not draw grid current; as a result, no grid swamping resistors are needed, some have been tried but they are not necessary.

#### CONSTRUCTION

The exciter is built on a chassis 11" x 17" x 3". As can be realised, there is very little spare room, though due to careful layout no undue crowding occurs, and feedback troubles have been

The layout need follow no hard and fast pattern, as long as common sense is used; keep a.f. circuits clear of r.f. ones, shield the wiring and components of the 6AU6 and 6L6G stages from the rest of the r.f. circuit wiring, to avoid coupling the carrier around the balanced modulator stages, and so feeding it to the linear amplifiers directly by coupling. All r.f. wiring should be made as short and as direct as possible. The 6BA6 linear stage was added after the original idea of using 6H6s in the balanced modulators was discarded, is built on a small sub-chassis mounted stop the main chassis, thus being completely shielded. No metering facility was found necessary in this A shield plate was made to fit ov

the bottom of the chassis, to totally shield all wiring in case trouble was encountered from external fields causing instability. To date, however, the use of this plate has not been found necessary.

#### Locations of Coils

The coils for the balanced modulators' output tank, and the r.f. phase shift network, are mounted below the chassis, oriented at 90° as well as being shielded from each other, and well separated. The condensers used to tune these two per section used as two gang condensers. The 80° output circuit is mounted above

All other tuned r.f. circuits are semifixed tuned, completely shielded. Each is mounted in a 300 Kc. i.f. can, from American I.F.F. units. These i.f. units are labelled "355-1696," and were available in Sydney very cheeply. The coils were removed and used as r.f. chokes, and the cans, together with their internal structure, were slightly modiinternal structure, were slightly modition of the control of the control of the the two stug tuned colk originally were mounted. Timmer type screwdriver adjustment condensers are used, and can be adjusted through one of the holes tuning slug screw. Coll data is given in the accompany-

Coil data is given in the accompanying table. A sing is used in the rf. phase shift network coil to allow its inductance to be varied, but once set, this slug is never again touched. It may save you pruning the coil when lining up the first time through.

#### Neutralising Condenser

The 807 neutralising condenser consists of a piece of suspectit covered 16 awg, timed copper wire, supported on a small lead-through insulator, and near the neutralising end of the 807 tank coil. The 807 tube socket is not sunk in the chassis, but the tube is shielded from the chassis up to the bottom of its internal plate assembly.

Care Needed With Audig Phase.

#### Shift Network

Regarding the audio phase shift network, special care is called for in its construction, this is in addition to the care needed in selecting components of the carbon type), must never be allowed to become more than silghtly on taken, the components, though all having correct values when measured on the bridge previously, will be usecarbon resistors can, and does, permanently change (ausally raising) their value by as much as 20 per cent. The to become untable.

The construction adopted for the network in this exciter was to use the common "fishback" bakelite type of mounting strip, as a base on which to mount all components, with the interconnections between them made on the reverse side of the strip. When soldering the resistors, leave long leads on them clamp the resistor pigfall being soldered in the jaws of a pair of bull-nosed pliers, between the end of the resistor and the joint, as near to the soldered joint as possible before using the sol-dering iron. Using this procedure, the of the pliers will dissipate the heat fed along the resistor pigtail and prevent it reaching the resistor. It changes are made at any time to the network or its associated wiring, always use the above technique, if resistor connections are involved

It may be argued by some that the finished job will not be as compact or finished job will not be as compact or will uppell disaster if the resistor becomes bested. As regards appearance, the unit can still be made tidy and presentiable, and variety of mice ones available around the trade. Silvered mice units around the trade. Silvered mice units condenses are definitely not recommended for this part of the circuit. No solidering to the mice condenser pigtalis.

#### DIODE F.M.

BY DR. A. F. TAYLOR, VK3AT

In the American Radio Journal "CQ" for April, 1952, Robert H. Weitchbrecht, W6NRM/9, described a diode modulator used for frequency shift keying. He tuning of the oscillator in his receiver, and suggested a circuit using the diode modulator for n.b.f.m. He stated that he had not, however, tried it out himbuilt a diode modulator found that it has several advantages over reactance tube modulation of an oscillator, namely:-

(1) Simple circuit

- (2) Does not affect stability of the
- (3) Does not increase frequency shift. (4) More than enough deviation is obtainable even for 3.5 Mc. phone.



The circuit used for remote tuning of an oscillator is shown in Fig. 1. Using this circuit W6NRM/9 obtained a tuning range of 20 Kc. in the 7 Mc. band when he used a 6C4 connected as a diode. When he used a 1N34 crystal diode the tuning range was 25 Kc.

\* 151 Maude Street, Shepparton, Vic.

The circuit for n.b.f.m. is shown in Fig. 2. It will be seen that the circuit consists of an audio amplifier with a 100,000 ohm plate resistor connected to a regulated B supply. The diode plate is connected to the plate of the audio amplifier via another 100,000 ohm resistor and an r.f. choke (these latter two components are to keep r.f. out of the audio system). The plate of the diode is coupled to the grid of the v.f.o. via a condenser of about 10 pF.. The cathode of the diode is earthed

Now a word about the speech amplifier. It was found that a great improvement in the quality when receiving the n.b.f.m. on an a.m. receiver was obtained when the lower voice frequencies were attenuated. This was done by decreasing interstage coupling condensers the speech amplifier to 0.0003 uF.

Secondly, a logarithmic compressor was incorporated in the speech ampli-This kept the deviation constant so that the signal did not deviate more than 3 Kc. on voice peaks, and at the same time, the apparent audio strength of the signal at the receiving end was increased

The condenser C in Fig. 2 is a 3 to 30 pF. air trimmer; it should be as small in capacity as possible. When the full 30 pF, is used the n.b.f.m. on 80 metres is quite satisfactory, but on listening on 20 metres a small f.m. ripple was ob-served in the carrier. Decreasing C to about 10 pF. completely cured this, and now a clean carrier is transmitted all bands. During modulation, the carrier is clean and no "swooshing" is

The condenser C must have a d.c. return circuit to earth, either via the v.f.o. tank coil, or the v.f.o. gridleak The writer uses a Clapp v.f.o. on 160 metres with the condenser C connected to the grid of the oscillator valve with a grid leak of 100,000 ohms to earth. In tests with VK3GU, this method of n.b.f.m. gives a louder signal in his receiver than the cathode modulation used for a.m.

As Ham receivers vary greatly selectivity, some adjustment of the may be necessary during QSO. If the report is one of weak audio in comparison to the strength of the carrier, the deviation should be in-creased slightly. If the reporting station says that the phone sounds dis-torted, then his receiver is fairly selective, and the deviation should decreased



through the diode for the circuit to work, hence the d.c. connection between audio If some members more advanced in

theory can offer an explanation of how this circuit works. I would be most interested. PEFFERNCES

The Useful Diode Modulator," "CQ," Apr., 1852. Logarithmic Compressor," "Amateur Radio," 

## V.H.F. TECHNIQUE CERAMIC MICRODENSE

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739—8 x 8 pF. Butterfly
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Amateur Radio, January, 1953

## A SUPERB 30 WATT MODULATOR

BY C. A. CULLINAN,\* VKTXW

Judging by conversations one hears on the Annateur phone bands, the most popular transmitter is one using a single for running at 60 wates input, this being the maximum rated input under I.C.A.S. modulator of 30 watts if full modulation with negligible distortion is required, although it is possible to get away with a lower power when speech only is to be provided the control of the control of

An analysis of the parts position shows that modulation transformers with a 30 watt rating are readily available at reasonable cost, and that a really good 30 watt modulator can be constructed without much difficulty using either 6L6s or 807s in the output stage.

The R.C.A. receiving tube Handbook shows an interesting set of characteristics for a pair of 6L6s in Class ABI operation for 32 watts output at 2% distortion.

The typical operation for self bias is as follows (two valves):-

s follows (two valves):-		
Plate Voltage	400	volts
Screen Voltage	300	volts
Cathode Resistor	200	ohms
Zero Sig. Plate Current	112	Ma.
Max. Sig. Plate Current	128	Ma.
Zero Sig. Screen Current	7	Ma.
Max. Sig. Screen Current	16	Ma.
Load Resistance (plate to		
plate) 6	.600	ohms
Harmonic Distortion-		

Total 2%
Third 2%
Max. Sig. Power Output 32 watts
Peak A.F. grid to grid voltage 57 volts

The application of approx. 9% of negative feedback to the output valves will reduce the distortion to negligible proportions and this has been done in the design under discussion.

The power output of 32 watts is, or course, the valve output, it is contrast, the valve output, it is contrast, and the valve output, it is contrast, and the efficiency of the transformer. For a good design, 30 watts at the secondary can be obtained working the valve output of the valve output will be at that a 30 watt valve output will be 15 watts in the secondary.

The design of this modulator comprises a 6837 valve pentode connected in the drst stage. There are two sections of the drst stage in the stage of th

For the second stage, another 6SJ7 is used, this also is pentode connected and care taken to run all earth returns in this stage to a common point.

\* 64 Lawrence Vale Road, Launceston.

For the third stage, a triode connected 6V6 is used and this valve is transformer coupled to a pair of 8075 in the output stage. Between the second and third stages is located a "dialogue equalizer."

A flue-position wafer switch permits either "fish" response or four responses with different amounts of bass reduction, these being 4, 6, 8 and 10 ch flue permits for the permits flue fisher and the fisher separate for the amplifier to be used, but in the other positions removes the bass to give a clean crisp quality for use when chasing DX. This circuit does remove the bass ones, is merely removes the bass ones, is merely removes the bass ones.

The valves shown should be adhered to or some funny results may be obtained. In the circuit shown the bass response starts to fall off shout 500 cycles and is down by the amounts both the volume control and the equalizer switch are mounted in the most convenient position for short, direct leads, and control exercised through flexible shafts.

#### TECHNICAL ARTICLES

The Technical Editor reports that the technical articles' bag is very nearly empty, so how about it chaps?

Don't forget the beginners have to be catered for, so articles on berinners' continuent are also

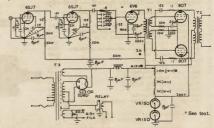
(For those who would like to use the equalizer in an existing modulator, don't place it within a feedback loop or you will be in trouble.)

Negative feedback is applied around the output valves in a simple sure-fire the cutter of the cutter

It will be observed that the acreems of the 80% are voltage regulated. This of the 80% are voltage regulated. This peak was the server of the 10% are voltage regular containt acreem voltage and the server of the 10% are the 10% are voltage and the 10% are voltage are vising and voltage are vising are vising and voltage are vising and voltage are vising and voltage are vising and voltage are vising are vising and voltage are vising are vising are vising are vising are vising and voltage are vising are vising are vising are vising and voltage are vising are v

zero signal and full output.

Another point of interest is that the contacts of a relay are wired in the centra-tap of the ht. winding on the centra-tap of the ht. winding on the between the central table of the ht. winding on the transmitter is off. This is done to prevent the amplifier operating into practically an open circuit if the volume transmitter is off. Note that the static hield on the transformer is tied to the



T1—Interstage coupling transformer.
Primary 4,000 or 5,000 ohms, to
carry 40 Ma. d.c. Secondary to push
pull grids with split secondary and
all secondary leads brought out.
T2—Modulation transformer, multimatch type. Primary connected to

match 6,600 ohms push pull. Secondary to match r.f. load.

T3—Power transformer. H.t. secondary 365/385 at 250 Ma. Filaments: 5. 3a.; 6.3v. 4a. Static shield to be brought out separately.

Ch—20 henry low resistance filter choke.

Amateur Radio, January, 1953

ht. centre tap, not earth. This is to prevent breakdown of the transformer when opening the centre tap—no trouble in this direction has occurred in 18 months' operation of the amplifier. A toggle switch is wired across the relay contacts so that the amplifier can be excitation is not available when relay excitation is not available when

In order to reduce hum to a minimum a 50 ohm pot. is wired across the heater winding and adjusted for minimum hum.

Certain points should be noted in order to obtain first class results. The voltage at the output of the ht. filter should be 415 volts to 420 volts. This, with a 385/385 volt h.t. secondary calls for a very low resistance filter choke.

The de-coupling resistor in the plate circuit of the 6V6 should be adjusted to give 265 volts between plate and ground on the 6V8.

Likewise the three screen dropping resistors for the 807 screens should be

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adjusted so that the maximum current through the VR150s does not exceed 30 Ma. For this purpose one of the resistors should be adjustable.

The grid resistor for the first stage is shown as 0.5 megohm. This is done purposely in order to reduce further the bass response of the crystal microphone used as it has a substantially flat response from 50 to 8,000 cycles when a 2 megohm resistor is employed.

The frequency response of this modulator depends to a great extent on the modulation transformers. With most multi-match transformers, the response will vary slightly with different tappings.

will vary slightly with different tappings. Set for a 600 ohm output the response, in the "fat" position, was 5 db down at 50 cycles, 3 db down at 100 cycles, and flat from 500 cycles to 13.5 Kc., the upper limit of measurement, at 30

watts output.

Power output at 500 ohms output into a resistive load was 30 watts for less than 1% distortion above 500 cycles. Noise, mainly valve hiss, was —55 db below 30 watts output.

below 39 watts output.

There is plenty of gain to work from any good crystal microphone or from a high impedance dynamic type.

high impedance dynamic type.
Finally, for those who like music
well reproduced, the fitting of a properby compensated pick-up and substitution of a wide-range output transformer
will result in a home record player far
above average. If your speaker system
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#### Storing the Spare Resistors and Condensers

"How To Vote" Cards for the last Victorian Federal Senate Elections were long and narrow and are very handy to mount most since of resistors and classification so that they may be easily and quickly located. All that is neceseary is to punch holes in the cardboard a suitable distance apart, push the pixamial to be suitable of the suitable laind to had the complete of the laind to had the laind to had the laind to had the post- NEAGCW who used the cardboard backs of writing pads.—A. D. Buchanan, YKSACW

#### ACCURATE FREQUENCY TRANSMISSION RESULTS

#### Thursday, 27th November, 1952

	**				-	-	
7000				****	32	cycles	TOM
7020	Kc.		****		2	cycles	low
7040	Kc.	-	*151		17	cycles	high
7060	Kc.		****		13	cycles	high
7080	Kc.				9	cycles	high
7100	Kc.				19	cycles	high
7120	Kc.	1310		****	no	check	
7140	Kc.	****	****	****	по	check	
7150	Kc.	****			17	cycles	high

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#### W.I.A. NATIONAL FIELD DAY, 1953

#### RULES

 The National Field Day Contest of the Wireless Institute of Australia will be held on Sunday, 25th January, 1953. The Contest will be of twelve hours duration commencing at 0900 hours E.A.S.T. and concluding at 2100 hours E.A.S.T.

2. The Contest is limited to portable stations operating within the Commonwealth and its Mandated Territories on a power not exceeding 25 watts with the antenna connected, with a special section for fixed stations working to portable stations.

3. A portable station for the purpose of the Contest is defined as one whose power is not obtained from either private or public mains, shall not be located closer than five miles to the home location of the operator(s) and shall be described in the countried walling.

not be situated in any occupied dwelling.

4. No apparatus is to be set up or receted on the site of the portable station earlier than 24 hours prior to the commencement of the Contest. A station may be moved from one site to another within the same State during

the period of the Contest.

5. More than one operator may be used in the operation of the portable station provided that all operators are licensed Amateurs.

 Operation may be on any of the recognised Amateur bands and more than one transmitter may be used, providing that one transmitter only is used at any one time.

7. When calling, c.w. stations will use the call "CQ FD" and phone stations will use the call "CQ Field Day" to indicate they are portable stations. Attention is directed to the requirements for portable operation as defined in the P.M.C's. Handbook for the Guidance of Amateur Operators.

8. Sections.—The Contest is divided into four sections, namely,

(a) Open (b) C.W. (c) Phone

(d) Fixed Station.

The Open Section will consist of both Phone and C.W. Portable station participants may enter each of sections (a), (b) and (c) provided a separate log is entered in each case.

 Logs must be forwarded through the Division to reach the Federal Contest Committee, Box 1734 G.P.O., Sydney, not later than the 27th February, 1953.

10. Logs must show the location of the portable station, names and call signs of the operators in the party, a description of the transmitter(s), receiver(s), antenna(e). and the power supplies. The power input to the final stage with the antenna connected (must not exceed 25 watts) will also be shown.

11. Log entries are to be in the following order: Date, time (EA.S.1.), band, power, station worked, reportsent, report received, QTH of station worked, contact points claimed, bonus points claimed, and portable operator's call. A summary at the conclusion of the Log will facilitate cheeking.

12. The completed Log must be signed by each of the operators with a statement that the P.M.G's. Regulations and the Rules of the Contest have been observed and that the operators agree to accept the decision of the Federal Contest Committee on all matters pertaining to the Contest.

 Scoring.—For the purpose of the Field Day, the following constitute VK Districts: VK2, VK3, VK4, VK5 (South Australia), VK5 (North Territory), VK6, VK7 and VK9.

14. Serial numbers must be exchanged during the Contest as follows: The first three figures will be the RST in the c.w. section followed by the serial number of the contact commercing with any first contact and increasing by one for each successive contact. In the phone section the first two figures will be the RS and then as in the c.w. section. In addition, the QTH must also be given

15. Points will be awarded as follows:

Portable Stations—

(a) For contacts with a fixed station within the Commonwealth (Rule 13) including the Competitor's

State 1 point.
(b) For contacts with other portable stations in the Contest within the same State 2 points
(c) For contacts with stations in Asia,

(c) For contacts with stations in Asia,
North America and Oceania (outside the Commonwealth, Rule
13) 3 points
(d) For contacts with stations in

(d) For contacts with stations in Europe 5 points (e) For contacts with stations in Africa and South America 7 points

(f) For contacts with other portable stations outside the State, 10 points (g) A bonus for each Continent worked on each band. For Oceania the contact must be outside the Com-

Country worked on 50 Mc. Add to the final score 25 points (i) A special bonus for each Interstate or Overseas contact on 144 Mc. Add to the final score 50 points

Fixed Stations—

(j) For contacts with portable stations

in the Contest within the same State I point (k) For contacts with portable stations in the Contest outside the State

16. Awards—An attractive certificate will be awarded to the outright winners in each Section, namely, Open, C.W. and ed to the winner in each Section and to the fixed station in each Section and to the fixed station in each points gained in contacting portable stations in the Context. Further Certificates may be awarded at the distribution of the context of the

17. Certificates will be awarded to each operator of the winning stations provided each operator has contacted 25% of the stations contacted.

#### AMATEUR CALL SIGNS

FOR MONTH OF OCTOBER, 1952

YK—

New Seath, Wales

ZHA—H. Oakes, 16 Globe SI, Zigneillfe,

ZHA—H. Oakes, 16 Globe SI, Zigneillfe,

ZHAS—J. A. Whitker, 12 Steady SB, Randwick,

ZAES—J. Stephenson, 3d Myall SI, Purschbowl,

ZAES—J. Stephenson, 3d Myall SI, Purschbowl,

Diguin, Cro. Strictor SQL, Deriv.

Biguin, Cro. Strictor SQL, Deriv.

Biguin, Cro. Strictor SQL, Deriv.

Biguin, Cro. Strictor SQL, Deriv.

AOU—A. N. Wilson, Flat J, 155 Parsments Rd.

AOU—Merickett, 116 Feather, SL, Camptel

APQ—P. J. Healy, 69 Taylor SL, Bankstown,

AQC—P. R. Ladd, 61 Scobelln Heed Rd., Tur-

ZAQC-P. R. Lodd, 61 Bobbin Head Rd., Tur-Turnura.

ZARL-B. W. Clemens, 62 Eastwood Ave., East-Land Company of the Company of

W. S. N. Ballet, 4 swarspool Ave, Crassas,
Buddy, S. Wincent's St., GlenBuddy, S. Wincent's St., GlenABG-J. A. G. Miller, 23 Morgan St., GlenARA Annille, 3, 16 Francis St., Balrmade,
ARA J. S. Pincott, 16 Dunscombe Ave, AnniBallet, S. Pincott, 16 Dunscombe Ave, AnniBallet, Bardy, Ballet, P. Bert, Miller,
ARAC, Barden, Bard, Barden, Heads,
Gelt Rés, Barwen Heads,

4PA-A. L. Price, Tonks Rd. Moorooks, S.4, Brisbane. 4PQ-N. L. Martin, Wallace St., Bell.

SGE—R O. Pitts. Fiving Doctor Base. Alice
Springs.
BHO—C. The Bullock, Meteorological Office.
BU—J. Neville, N.T. Comd. Sig. Sqn., Larrakgraph Barracks, Darwin.
SSR—R. Shortt, 356 South Rd., Glandore.
SXO—A. W. Kelly, Ohanner St., Berri.

FBJ-B. M. Johnson, C/o. Australasian Petroleum Co., Port Moresby.

Co., Port Moresby.

ALTERATIONS

VK.— New Seath Wales

VCT.—First 3. e. Westerners Ave., Point Piper.

INS.—222 Kepp Buckhurst Ave., Point Piper.

LADN.—Tama Thesire, Coffs Herbour.

2AEZ.—84 Railway Street. Gesford.

2AIO.—35 Pecific Pde., Towoon Bay, vis The

2AIO-33 Pacific Pde., Toowoon Bay, via The Entrance. 2AMM-28 Crown Street, Stockton, Newcastle. 2ARY-31 Mansden Street, Bocrows. 2ASY-31 Soliver Street, Barbord. 2AWU-32 Annac Street, Canterbury. 2AZN-37 Redgrave Mood, Normanhurst.

Viteris

1AV—3 Robinson Brest, Danderong,
217.—Belmont Read, Cryofon,
217.—Belmont Read, Cryofon,
217.—Belmont Read, Cryofon,
217.—Belmont Read, Cryofon,
217.—Service Read, Service Read,
217.—Service Rea

Queensland

4KB-Cambridge Street, Belmont, Brisbane,

4GA-"M.Y. Coongoola," C.o. Messra, Wetts and
Wright, Byron Street, Bullmbn.

4GX-15 Porter Street, Mackay,

4TG-33 Amarina Ave, Ashgrove, Brisbane.

Western Australia 6GL-131 Forrest Street, Peppermint Grove. DELETIONS FOR SEPT. AND OCT., 1833

New Seath Wales: VR. SV, 2NN, 2gH, 2dD.

New Seath Wales: VR. SV, 2NN, 2gH, 2dD.

VKSYY, 2ALR (now operating under VKSDY), 2ALR (now operating under VKSDY), 2ACC (now operating under VKSDY), 3ACC (now operating

VICIGL), 4VR.

South Australia: VKs 5IS, 5SC (now operating under VKZASG).

Western Australia: VKc 5CS, 6HB (now operating under VKSHO), 6LQ.

Tantannia: VKTDJ.

Territories: VKs 1SD, 9XK (now operating

## FIFTY MEGACYCLES AND AROVE

Compiled by J. K. RIDGWAY, VK3CR.

N.S.W. V.R.F. GROUP NEWS

The next meeting of the W.I.A. V.h.f. Group had not been decided up to the meeting of this Group was a great success, there was large roll up and many ena, of the C.S.I.R.O. He delivered a lecture on the probe type capacity, Q, and resistance measuring meter. Barry 2ABB thanked Mr. Medena on behalf of W.I.A. members for a very interesting night, after many questions were asked

and answered. and answered.

59 Mc: This band was almost dead when news came that 2JW and 2WH had worked KJJ and 4CW. About a week later on the 27th Nov. 2APF and 2VW worked 4HR and 4KN. Then 2LZ (Wentworth Falls) heard 2KF and 2FN on 32rd and 26th Nov. On the 29th and 2FN on 32rd and 26th Nov. On the 29th About 2FN on 32rd and 26th Nov. On the 29th About 2FN on 32rd and 26th Nov. On the 29th About 2FN on 32rd and 26th Nov. On the 29th About 2FN on 32rd and 26th Nov. On the 29th About 25th Nov. 30th Nov. the band opened to ZL 4, 5, 6, 7—a fine two days, 6DW/M/

VK5 was worked from Sydney. 144 Mc.: 25th Nov. the band opened to the North and signals from Muswell-brook, Newcastle and Singleton were worked. Congratulations to all who

OSOed DX for the first time Don't forget your skeds with VK3. We transmit at 8.30 p.m. and VK3 transmit at 8.35 till 8.40 p.m. each night. Who can say what may happen?

can say what may happen?

The Woy Way Field day weare at first. Support of first support of first. Support of first support of first. Support of first. Support of first support

and xtal control tx.
On 5th Dec. the Gladesville Radio

Club held a barbeque which was well received by all who attended, it was a great night believe me. There should be more! Congrats to the organisers. Mobile units have been doing the rounds lately and 2ABO, 2HE, 2AGL 2ANF, and Gladesville Radio Club 2ADY have made many contacts in and around Sydney. All had very good signals. We think the longest mobile contact was from 2YM/M, at the Jib Bowral, to Pennant Hill, where 2ANF/M was in contact while mobile. Anyone had a longer contact?

3HK/M/VK2 was unfortunately not able to go on 144 Mc. owing to losing his xtal, but is on 6 mx. Keep a look out for him. We have heard of lot of Eric 3BD/M/VK2. He has a very nice signal on 6, last worked from Mt. Jib-ralta, Bowral, N.S.W. On 30th Nov., 2ANF heard ZTA Young on 144 and worked cross band six and two for some time, signals were S7-8, at 1208 hours Results of the big field day are now

at hand. Awards were made as follows: The prize for the greatest distance on 144 Mc. was awarded to Ross 2PN, who worked Interstate from the Granites. worked Interstate from the Granites, near Batlow. He worked 3UI, a distance of 178 miles. V.h.f. Group Cup was awarded to Allan 2AST for the greatest number of contacts. He made 13 con-tacts. The Gladesville Radio Club prize was awarded to two chaps, 2WH and 2TA, for the country home station making the most contacts. The W.I.A. prize was awarded to John 2WJ, the Sydney home station making the greatest number of contacts. To all these fellows we send congratulations for a very fine effort. To all the others who participated, we say thanks a lot.

The V.h.f. Group take this opportun-

ity of wishing you all a very Merry Xmas and a Happy New Year.—2HO.

VICTORIAN V.H.F. GROUP NOTES

Overseas Amaieur magazines show that long distance contacts are occur-ring fairly frequently on 2 mx in U.S.A. and Europe. Australian Amaieurs are not exactly behind as far as long disiance is concerned, but there are many signal paths yet to be spanned on this band from the metropolitan area. Percand from the metropolitan area. Per-sistent efforts will go a long way to achieving these contacts. With this in mind, VK2 and VK7 stations have initiated skeds with VK3 and other States. VK2 stations call us at 2830 States. VR2 stations call us at 2839 hours for five minutes and then listen for our signals for five minutes. VR7 stations call us at 0464 smll 2099 hours for three minutes. There is also the possibility of getting through to other States and ZL LeV's give them our coeperation. Obviously, the greater the number of stations taking part, the greater the possibility of contacts occur-ring. It is suggested that in these tests use be made of keyed a.w. with a TS

In the metropolitan area activity has been improving. Interstate openings and the Ross A. Hull Memorial Contest have again livened up 6 mx. 3AYJ is often 52 Mc., he is putting out quite a good signal. In the N.E. Zone, 3UI and 3APF are cooking up some mobile gear for 6 mx. 3JK will soon be on the band and is already active on 2. We are pleased to know that 3CI is making good pro-gress after the accident. Better stick to On 2 mx, SAOL, of Belmont, near

Gelong, has reappeared on the band, 3UG, 3AKE, 3EW, 3ZL, 3GM, 3AEB, in the nearer country centres are maintaining consistent activity. 3XA, who operated portable from Mt. Stanley

PREDICTION CHART FOR JAN., 1953





T.C.C. 1.5 uF. Condensers, 4,660 volts D.C. working, £4 each Limited number of the following Taylor Tubes: TZ20s, £2/10/- each; TB35s, £6/10/- each, TRANSMITTERS ALTERED FOR BUSH FIRE AND FISHING BOAT WORK.

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early in November, succeeded in conearly in November, secretary the received at Forbes, a distance of 219 miles. Signals were R5 S4 both ways. 2AMV, also at Forbes, reported hearing Don's signals. Don contacted 13 different 2 mx stations while at that

location The V.h.f. Group meeting was held on 19th Nov. Reports were given by those operating on the last field day. Despite the unsettled weather on that day, 2nd Nov., there was a fair amount of activity on 144 Mc. Portable stations active were 3ADU, 3JO, 3ZL, 3YS, also a number of home stations operated.

A sum of money has been allocated by
the VK3 Council for prizes in the v.h.f. field day contest and details will be publicised later. 3ADU showed the Group his 2 mx portable set-up and

described the relevant details Have you previously operated portable equipment from some high open air location? If not, may we suggest that this would be a pleasant way to spend the Sunday afternoons of 1st Feb., 15th March and 26th April, for these are the dates of the remaining v.h.f. field days for this season. Portable gear need not necessarily be elaborate. Some are using xtal controlled tx with two tubes to give r.f. output on 6 mx, and three tubes for 2 mx, and very good results have been obtained running less than 3w. input to the final. A number of possibilities exist for the rx. The simplest appears to be the super regen, preferably with an r.f. For better selectivity and allround performance, most use a simple converter with shortwave rx, or com-plete v.h.f. rx. The antenna may be a dipole or a simple beam.

Victorian V.h.f. Group meetings ar held on the third Wednesday of each month at the Institute rooms, 191 Queen St. Listen to 3WI for further information. Incidentally, transmissions are now being radiated on 6 and 2 mx from 3WI simultaneously with the 40 and 80 mx news broadcast. Modified TR1143s on 51.016 and 146.25 Mc. respectively are used, feeding single bay turnstile antennae. All those who assisted, and donated equipment for this set-up, are duly thanked .- 3ABA

#### QUEENSLAND

The following 50 Mc. news is to hand from 4XJ of Bundaberg, Queensland:— VKs 4CW, 4BJ and 4XJ are active most evenings with 4CW watching the most evenings with 4CW watching the band each night at 8 p.m. and calling CQ at 8.05 p.m. Several openings have taken place. On 12/11/52, 2010 hours, and again on 16/11/52, 1005 hours, 4CW and 4XJ worked 5BC. 16/11/52, 0930, 4CW worked 27W. 17/11/52, 4XJ worked 6BO (1137 hours) and 6HK (1144 hours). 19/11/52, 1200 hours, 4CW and 4XJ worked 2WH. 18/11/52, 4CW half worked 3LV and heard 3JD.

#### SOUTH AUSTRALIA

It was with regret that we learned that 5KL would not be able to continue with the v.h.f. notes. Any inaccuracies or short comings are due to the old saying that "one volunteer is worth ten pressed men." "Bully" Parsons pushed

this on to me and I could not think of an acceptable excuse to dodge it "Twas Xmas Day just six years ago that the first v.h.f. Interstate contacts were made with South Australia. Since then contacts have been made with all States. New Zealand and New Guinea The crystal ball, being a little cloudy today, no forecasts are available for the next half dozen years.

On 25th Nov. signals from the Hobert and Launceston 33 Mc. range were copied at Macquarie Island On past experience this is a good sign provided we can get a few v.h.f. enthusiasts down

those parts.

VK5's loss will be VK3's gain. 5MO VK5's loss will be VK5's ham one has been disposing of quite a lot of nice gear prior to his transfer to Meibourne No doubt sufficient has been retained to put a sig on the air in VK3. 5CR is reported to be an enthusiast on 288 Mc. and 'tis believed that he will soon be mobile marine on that frequency. 5ME was heard discussing an interesting piece of equipment. Wonder if he could be persuaded to publish it sometime?

The "Janitor" has constructed a super regen for listening to the local "hacks. Bet he is not game to put such a rx on 50! Whilst not at liberty to disclose this gent's identity one can now understand the connection some people have with the broadcasting game.

5MK heard t'other night from the new OTH, antenna is bigger and better than ever. 5FM and 5FL still going strong with their "tete a tete." The packpot question is, "will the DX season break this up?" Other stations active are 5KN. SKY, 5XA, 5SD, 5TD, 5JJ, 5KF and 5RR

In the July issue of the Meteorological Magazine there appeared an interesting account of v.h.f. experiments in England.

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## DX NOTES BY VK7RK°

It always seems most unfortunate to me that the DX season coincides with so many other activities. Spring classing, and the season of the control of the con

3.5 Mc., as is usual when the higher frequencies open up, takes a back seat. The noise level here has been far too high for serious listening and as no other reports have been received, evidently the same conditions apply alse-dentily the same conditions apply alse-

7 Me. also in the rumble seat to a sceser degree. Most nights, QRN permitting, Ws and VES make their appearant to the result of the result of

14 Mc.: This band at the moment is capable of providing interest for all of each 24 hours. Early morning gives Europe, around 2200c to mid-morning North America long path, and an occasional African, from 200c to 6060c all during the evenings, and Europeans again from 1200c cowards.

AXJ, despite increased 60 Mc. active SMAANY, ANGLE OKIMIC OKIMIC OKIMIC SMAND OZERA, SMAAOI, SMSEP, KKO, KYAR, SMAOI, SMSEP, KKO, WAR, SMAOI, SM

KP4CC, KP4AZ as being fairly consistent during evenings. Alan has now received his awards for W.A.S.M. and Canal Zone 25.

7RK heard the usual run of things during the month and managed three new ones with GD3TBO\*, LZ1KAR\* and SUIGG\*. Some others were AP4A. 4UAG, 4UAS\*, FA9RW, MI3LK (who was only interested in Ws), OQ5RA. ZS6ID\*, ZS6YW\*, CN8FR, LU6ART, LU6AJ, LU1CA, LU7AAD, PYICK, TIZTG, CE3DZ, KY4AA\*, KV4BA, COSAQ, CO7AH, EASFB, TASAA ZC4TP. MP4BBD. 4X4DH. 4X4FA VU2AT. VU2CR. VU2EJ. PISDN FK8AB, CR9AF, FKS8AC, OHIOR YU1DA, LJ3A\*, DJ1BZ\*, OE3DP, EA3CK, PA0RB, HR9MI. LA4KD OZ2PA, EI5C, UL7KAA, One call which sounded unusual to say the least was PIILS who said he was on the "weather ship, Cirrus, 61°N, 19°W,"

Listings as specifically phone are:
from 46W OESKK, HZJAB, VSSAW,
OHZON, His compatrie, 4XJ, worked
11AUC; HZJMY, ZM6AA\*, plus W6.
3AMB heard KP4AZ, KTJMY, ZSSBW,
their lonsils were VKLRG, KG6ADZ,
and VSSAW. This latter station is very
consistent and puts in a solid signal
down here.

21 Me. is summed up very well by CAWU who says that the band is open practically every night to Europe and practically every night to Europe and the CAWU who was to be considered to the CAWU when the CAWU was to be considered to the CAWU when the CAWU was to be considered to the CAWU was the CAWU was to be considered to the CAWU was the CAW

23 Me. would be a washout were it not for 45L. Les seems to manage his quota each moth and this log shows him working W4KNW, W5KBP, W5VIU, W5BCT, W6VAD, W6BUR, ZK2AA, KG6FAA, KAZOM, KH6NES, KH6AFR, KH6AFR, KH6AFR, Many thanks OB. Without you, the above few lines would

be a complete blank

QSLs received this month by 3CX

were FFRAC HSIIN and FASAM to

were FRAC, HSIUN and EA6AM to make Alan's total 157 confirmed, out of 177 worked. 4QL aroused my green eye with a card from CR5AD, while the best I could manage was KH6ANZ for my first 21 Mc OSL.

QTHs of interest for those fortunate enough to QSO Zone 35 are: FF8AC, Box 6020, Dakar, Senegal, Fr. W. Africa; FF\$AN, Box 971, Dakar, Senegal, Fr. W. Africa. Another that may be of interest is 4UAS (ex HSIUN) C/o. United Nations, Rawaepmdi, Pakistan. SUIGG says QSL va R.S.G.B.

Of general interest is a note from KV4AA. Dick says to watch out for operation from Easter Island next January or February. CE3AG is to handle the cw. and CE3CZ the phone end of the words. The control of the control

My thanks this month to the following for contributions VKs 2AWU, 3AHH, 3CX, 4XJ, 4CW, VK6-4222, KV4AA.

As this should reach you during the festive season, may I take this opportunity of wishing those interested enough to read these notes all the Compliments of the Season and may 1853 produce, in spite of all ionospheric propagation experts, buckets full of that clusive but over fascinating article—DX.

D	X C.C.	LISTING	
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# FEDERAL, QSL, and



## **DIVISIONAL NOTES**

#### EKDERAT.

DEPARTMENT CONSIDERING A.O.C.P. AT IS YEARS

Application has been made to the Postmaster-General Department, Wireless Branch, for the issuance of Amster Operations Certificates of a single of Amster Operations Certificates of all engineen years as at the present time. The WIA. after careful study of this question at more than one Peters between the single of the more than one Peters to even the single operation of the peters of the pet

Although the Department has said that an amendment to paragraph 35 of the Wireless Telegraphs Regulations would be necessary, and that investigations in collaboration with educational authorities and other interested parties would have to be conducted, the Department has intimated its interest in W.LAS. representaand enquiries are proceeding

#### NON-AMATEUR STATIONS IN THE HAM BARRS

The main complaints of Commercial stations of the main complaints of Commercial stations cern the bands 76-7159 Mc. and 140-7450 Mc. allotted to the Australian Amazura Service in a south-wide bands of the 76-7159 Mc. and 140-7450 Mc. and 140-74

"189. In Australia and the Netherland East odies, the band 7100-7150 Kc., and in China nd New Zedland, the band 7100-7308 Kc. may o illocated for the Amsteur service. The

administrations of the countries mentioned in this note shall take all practicable steps to avoid causing any barraful interference to the proadcasting service and will ensure that Am-airur stations do not use a peak power exceed-to the broadcasting service is experienced, these administrations will consider reducing the use of these bonds by the Amsteur service.

of these boards by the Anasteer service. The Department is steam, because it is not a service that are coordinate to the first he? I and if the Anasteer to the service to

Arnhaur Johns. W. L. Instead to watch the implementation of the Allantic City Prequency Table closely over the Allantic City Prequency Table closely over the Control of the Allantic City Prequency Laboratory of the Convention take place when representations can be made on behalf of the Australian Annaleur service for the frequency allocation 2.0 to 7.3 Mc enjoyed by Other Region 3 Amsteurs.

BE-ALLOCATION OF CALL SIGNS The W.L.A. requested the Department to review the conditions under which call sign previously issued were re-issued to anothe Amsleur to avoid embatrassment in the case porticularly, of recently deceased Amsleur

sough the Department admitted its appreca-on of the sentimental value placed on call igns by individual Amateur station licenses, would not in the interests of economic admin stration introduce a system which did not how practical advantages over that in current see. In reviewing the position, however the show practical advantages over that in current use. In reviewing the position, however the Department has adviced that as from this time deposed in the instance of cell signs—

10.5 Where licenses are relinquished because the properties of the properties the properties of the properties of the properties of the properties the properties of the properti

These reservations will be conditional on submission of an appropriate application in

submission of an appropriate application in such case. Incheses seeking the Pristate of a classification and the case of the property extending beyond the adroresid period of two years will be granted that use of the previous roll sign if will avoid the case of the previous roll sign if will avoid the case of the previous roll sign in the previous roll sign in the case of the previous roll sign in the case of the previous roll sign in the case of the previous roll and the case of t Amateur artivity is banned othe RECORDING AND PLAYBACK OF OTHER

#### AMATEUR'S TRANSMISSIONS

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sppear in any Section thereof the words "The Annual Federal Convention" and inserting in lieu thereof the words "The Federal Convention."

#### NEW SOUTH WALES

The November meeting of the NSW. Branch was held at Science House on Friday, 28th, with the President, John Moyle, in the chair. A special meeting started at 7.65 p.m. for the purpose of passing a motion asked for by the Registrate General's Department adopting the new constitution. It appears we only agreed to adopt them before and that wasn't good enough! asopt them before and that wasn't good enough. The ordinary general meeting followed with a smaller attendance than usual sabout activities, some, no doubt, being deterred by the nature of one of the two smaln items of business, the discussion of agenda items for hext year's convention if any! Some eight items were adopted with not very much argument. There is no second to the seco

ST GEORGE ZONE

AND AND SECRET STATES AND SECRET SECRET STATES AND any portable stations up to the Saturday night Reg 2HM gale out quite well on 8 watts, but as yet is still rock bound. AAIG has supplie him with circuit and constructional detain of a small vito, which he intends to build event unity, also hopes to get on 2 mx after Christ mas. AAIG has been waiting for 3DX to get

The Annua, Field Day of the NSW Division was hold at Woy Woy on Sunday, 18th Nov. For the third consentive year, over 200 per-For the third consentive year, over 200 per-programme running from 10.28 am. to 4 par Despite all the efforts of the weather propagation of the period of th

the day was forced have rower had a way to be a second of the second of

the most contacts in half an hour! was held to the most contacts in half an hour! was conducted at 2 p.m. In recent years the tx had always before the property of the propert

The afternoon was devoted to special events for the ladies and kiddies, special plans had been made to ensure they enjoyed themselves. The results of the various events and com-petitions were as follows.—

N.S.W. Division's Annual Field Day 

Mrs. DD. 532 raille: 1st, 28CO.
The many prizes were presented to the winners by the President of the Eunter Branch, near by the President of the Eunter Branch, in the alternoon. John Noyle 23U, in officially closing the day, thanked all those attending for Market and Control of the Control

The swee table conducted by Major 23U was popular as was the bran dig in which prizes varied from a 1822 pick-dup to quiet prizes and the prize and prize the prize that the prizes are also as the prize table 1818 and 1819 to the prize table 1818 281Z and 1819 TC were responsible for registration, Harier 25P brought the dispension malterials supplied by Bob 2AFS, John Linn 2AMF, Roy vor was done conspection. John LANF, Bob 302, 128W and Es Griffish, populated the tx that was so hard to find, State Secretary Dave 1250 and Federal Councilies Vaughan 170W assisted generally Rm 2ASE provided and XYL present.

child and XVL present.

To date no complaints have been heard about To date no complaints have been heard about to do express support for their OM's organiting efforts, that is news—it's practically a miracle. Seriously, everyone present enloyed the day, the next one will be even better, so CU at Woy Woy in 1663.

Min phone number has been changed to LJ
My phone number has been changed to LJ
like to ring through some news. I will take
this opportunity of wishing all, the Compilments
of the Season

ROULE WEST ZONE
ROULE WEST ZONE
ROULE WAS REVEWORD AS REPORTED IN REPORT OF THE ROULE ROUND ROULE ROULE ROULE ROUND ROULE ROUND ROULE ROULE ROUND ROULE ROUND ROUN Alf 2BW active on 40 and 80, also very inter-exted in 144, has SCR552 2RH active on 80, 40, 20 with new antenna for 20, and interested in 144 Mc. Stewart 2PL active on 40; reports

# Low Drift Crystals

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CANTERBURY, E.7. VICTORIA

NORTH COAST AND TABLELANDS

NORTH COAST AND TARLELANDS (URL TWY THE PROPERTY OF A COAST OF A C

nit periodic tests with the Police Lept.

y the time you read these notes Christmas
New Year will have pessed, so I wish you
a happy and prosperous 1853 and trust you
enjoyed the festive period.

#### HUNTER BRANCH

he lecture on "Audio Limiting," given by 2ZC, at the November meeting, was exceed-y well presented, and no doubt will start ther phase of equipment building in this ct.

Branch was well represented at Woy
and thanks to 2KR, 2KU and company, all
folly good day. When our President 2CB

VICTORIA

SOUTH WESTERN ZONE CONVENTION

Things got under way with a dinner at Craig so tolel at 6 p.m., twenty-seven persons being resent and an excellent need was fitted in monest a lot of regchewing. Our thanks go Bob 3GR who made all arrangements for e dinner and also for the use of a room e dinner and also for the use of a room.

for the sight.

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#### ε GOODMA Home of the Trade " Rundle St., Adelaide

Page 14

bogged at this location, but is a baseless rumour that it was lifted out and set on dry ground. This hint was won in fine style by 2AGD who approached the tx with the bow wave of a speed boat. Ext: Hall managed to get bogged after this hunt and had to be towed out by 3AGD. A case of the biter bit. We hope that the convention was enjoyed by all who were present and hope to see you all again at Warrnambool next April.

#### CENTRAL WESTERN ZONE

Zone drive quiet this month. Hook-up attended alarly quiet this month. Hook-up attended a large quiet the second of the second o by next year to resume Secretary's job.

Charlie MB has new rx in operation and is using it to good advantage in knocking over the DX. 3ATR and 3AKW attended Balarrat Convention and a good time was had, but pet being accusiomed to the wet, came home a ittle bedraggled.

#### NORTH EASTERN ZONE

NORTH EASTERN ZUNE
Syd 3Cl is now out of hospital and in a plastic
cast which reminds him of the heat a good
deal now. Doug 3II has returned to Avenel
to keep Chas. 3ACW company in the Amasteur
and Commercial radio field. Alsa 3UI has been
taking advantage of the 6 mx openings and has
utilit a new portable 6 mx if y running 5w. input. built a new portable 6 mx rig running ew. input. Col. 3WQ has got shrewed after a summer collection of the second second

#### EASTERN ZONE

After a very temporary active year. On the control of the control

vided much local beteries Jack TVF, in which local beteries Jack TVF, in which was a modifiate and coming down about patients are modifiated and coming down and the patients which was a supported manner. Just a modern process manner to have a modern to make the patients are provided in the patients of the patients and the patients of the patients o

### GRELONG AMATEUR RADIO CLUB

GRELONG AMATEUR RADIO CLUB
The first meriting of the month took the form
with the members and more have been arranged
with the members and more have been arranged
from Gesleng, and operated by ASACS and
construction of the control of the control

#### QUEENSLAND

The monthly general meeting of the VKG Division was held on 21st November, 1962, with Division was been on 11st November, 1962, wit 25 transmitting members present and a sprisk ling of students. Visitors welcomed were Alic Fong Yan VSSBH and VXZABZ ta VKA 60 timer). The former is now permanently resident in Brisbane and has made application for VK4 call sign. Let's hope he settles on the VK4 call sign.

Yell out me. Art's how to seller on the year of the control of the

auton, etc., but the correct and grouten feeling of the meeting was noon made ordent by replies from 64V and 62CH, particularly Mr. words that the identical articles in "A.F. were of the highest order and worthy of great praise, or the highest order and worthy of great praise, as papeared to be set for the night. The writer would suggest that any person not satisfied requirements of the second of the seco

merting and efficient order for potential processing processing and processing processing and processing proce

VERMAN, MPROFILES, EQUAL, VIRAM come of many controls, and control of the CTE and control o

NOTES FROM THE NORTH BY VEGEL NOTES FROM THE NORTH BY VKEEL.
Ted GUT at last has come up on the 14 M
band and has started of by working a strin
bean and has started of by working a strin
be the most active of the Townsville gaze, he
been heard on both phons and c.w. knockin
new recruit for next zezum, none other tha
hab bons, hil Harry 61W beard with a nic
going mate, consone must get on up have
Harry GEP been working a few nice cone or
14 Mc., seems the vertical is working out CI
A Mc., seems the vertical is working out CI 14 Mc., seems the vertical is working out r.b. Geoff SGW knocking 'em over no 11 Mc. in great style using an BJK, uses 22 Mc. also but reports it 'not so bet.' Doug 100 B has had be received to 14, 21 and 22 Mc. My old friend to 22 Mc. My old friend carl SYT, has build a new rig for portable operation on 7, 16 and 21 Mc., it is a re-build command fix. Carl SWI use it em route to his

Characteristic Carl will use it en town that characteristic Carl will use it en town't go on until this QSL cards arrive from the South. South of the Cards arrive from the South cards arrive from the South cards arrive from the South cards are south cards are south cards and the South cards are souther south cards are south cards are south cards are south cards ar

work. SWG, a real old-timer, who has been on from G, XZ, VS. VSL, VXII have yet another short of old friends to contact, so work be short of old friends to contact, so work be that all I seem to have for this month. I Cairns or Mackay district to drop me a line on the doings in their respective districts, or these notes will shertly dwinds away in nich-ean 21 and 14 Mc; my GEAA shocks going a bit-beller, and plenty of JIX being worked on 21 Mc.

#### SOUTH AUSTRALIA

SOUTH AUSTRALIA
The monthly general meeting of the YTG
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#### SOUTH EAST ABEAS

MMS is SOURS EAST ARREST, the moment, is hearing the over happy at the moment, to his mod transp. His new 60 ft. tower is exceeding the mod transp. His new 60 ft. tower is expected any day now. \$350 has been making his presence full on 20 mx with his 100w, to an expected any the making his presence of the making his making hi

tion and this means that Erg is in the throse of building a new modulator.

aCM is setting gest sorted out a new QTM, and the setting gest sorted out a new QTM, the six shortly (Laiste was a welcome videous to the best broadcasting. "this month and we got him a sparrow seek, together and we got him a sparrow seek, together and we got him a sparrow seek, together and we got him as parrow seek, together and we got him a proposed with all they saw. Both were suitably impressed with all they saw, STW expect to have his 2 ma fax ready by Monday night net for the weekly pow rewise Monday night net for the weekly pow rewise.

Monday night net for the weekly pow-wow. 37A is full of good resolutions and inten-37A is to all of good resolutions and inten-under the heading of newly murried, need any move? John, before his marriage, wa say move 10-lin, before his marriage, wa-wiston pictures with home made geur and pick-ing them up on his television zz that he fing them up on his television zz that he dim future he expects to continue with the dim future he expects to continue with the dise of radio. SCJ paid a short visit to the cit-sied of radio. SCJ paid a short visit to the citside of radio, SCI paid a short with to the city and removed friendships made in eablier within and removed friendships made in eablier within College, and slave following the contraction of the contract the VKS Council and all that remains is to set up a list of rules and then present the cer-tificates. Roughly the ideas is to represent the results of the results of the results of the who have been in the game of Annateur Radis for twenty or more years. I really should get one but the remove years, I really should get one but the remove years. I really should get one of the remove years in early should get form of the remove years. I would not be come "grey beard" as myself being insuled with a certificate. Woo-woo and other expres-sions of youthful orbulerance.

#### WESTERN AREAS

News from Pert Linean the month tells that a windstorm just recently and animally as a windstorm just recently and animal pert of a pert of

#### NORTHERN AREAS

The first meeting of the Ciare boys was haid at the control of the Ciare boys was haid at a success. Tim, has a very efficient set-up for his radio, especially when one realizes that he is entirely dependent upon batteries in the latest control of the control o The Northern Area boys say that they are stering to the W.I.A. Sunday morning broadsts on 35 mx, as the 40 mx channel is definely out at the moment, and they say that geg (SRR) re-transmission comes through OK. Regr's (atts) re-transmission comes circuign Ora-Ross 5LW paid a visit to Lance 8th. during a business trip up North recently. Lance sem me down the notes, and with the modesty that characterises all of my country correspondences left out any news concerning himself. Anyway, many thanks Lance, and here's boping you all make the Xmax meeting.

#### UPPER MURRAY AREAS

an mass of Amile message.

The moule to my suppose (you've bloome, make, might to my surprise (you've bloome, make, might to my surprise (you've bloome, might to mi

horse' in Contests.

Frank MZC has returned from his trip to the property of t

they may be, sincere wishes for a ver hew Year, and if you want it, may it best year for DX. To the VKS "cop My, "Reep striving, persistence has

#### WESTERN AUSTRALIA

WESTERN AUSTRALIA

Harpy New Year, good, Herry boying the molecular, deter conditions and news office. In the molecular determines the conditions and news office. In the control of the condition was the new office. In the condition was the condition will be considered that the condition was the condition will be considered that the condition was and as a great dies of the nations on reference need to made here to condition with the condition of the condition was the condition of the condition of the condition was the condition of the condition

gent Boult. He has worked Zustern VMs or After many months in the deliverant, I Me. After many months in the end of the straightful and the property of the straightful and the straightful and a QuO with GLI for shoots had no hour at a QuO with GLI for shoots had no hour at the straightful and the straightful and the straightful first city-country QCOs are possible at might loaded up with 6 mg gast, but no possible at loaded up with 6 mg gast, but no possible and possibilities around not comment-count for capabilities around note comment-count for and none against Cos VMs sweeped to pick me and none against Cos VMs sweeped to pick and and none against Cos VMs sweeped to pick and and none against Cos VMs sweeped to pick and and none against the straightful and the straightful and the straightful and the reduction of me any that my ideal of a viz. As reduction of the straightful and the straightful and production of the straightful and the straightful and production of the straightful and the straightful and straightful and straightful and the straightful and production of the straightful and the straightful and straightful and straightful and the straightful and straightful and the straigh which can best against but not impair the readability of an St or SS signal did not man readability of an St or SS signal did not man one can be more one's v.f.o. doesn't "get out" one can be more one's v.f.o. doesn't "get out" of anony others. You can have a v.f.o. which 'keep it to 'pourself." However, switching of all but one or two low-owner stages in the consequence of the control of the control of the versa weak pignals and we should stifly for such a state of sifiars M only for good operating's

mine.

Ern SEL seems to have given the game away
and so does Harry GBR who has his hand
hill of exams, braid new ah, car and as
ettack of YL-tits which will culminate late is
Pebruary in the greatest tragedy which cas
wortrake any Ham-wedding bath. Ho humite gets tech-jus-don't life.

#### TASMANIA

By the time this hits print, 1983 should be with us. I would like to take this opportunity to extend Season's Greetings to all members, near and far, and to express the hope that the New Year will prove brighter and better in

regards.

Letually, conditions do seem to have improved
mewhat on 14 Mc., and I am certainly hearg more DX than usual. Or is it that I have
sl listened at the right time? Don't answer.

point interest at the right time? Don't conver Richen Bills have been fairly welve in his official cannelly lately and quite few members have swelling their time. I would suggest that there as welling their time. I would suggest that there swelling help time. Those exposed high strength shoot when the few turns you knowd to get fant tent woulded as which of a certain to get fant tent woulded as which of a certain feet of the strength shoot which the strength shoot them to be the strength of the strength of

For a sea fee storates, and the storates of th

to expectations.

In liet of the Newment receiving numbers entertained visitors from Developers, ground and the second of the se

#### HAMADS 9d. per line, minimum 2/-.

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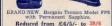
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